

ABSTRACT

A method for easily and uniformly forming a film at a low cost, which is comprising a diffusion-barrier layer 3 and a coating layer 4, on a surface of a substrate 1. The method has a preliminary oxidation step of forming a substrate oxide layer 2 by oxidizing the substrate 1, and a step of coating the surface thereof with a coating material containing at least one alloy or a compound, which includes an element forming an oxide having a low enthalpy of formation as compared to that of the oxide of the substrate oxide layer 2, and as a result.